

言語教育においてWeb 2.0を効果的に活用するための要因：ポッドキャストとWikis利用の観点から

Factors that Affects Effective Integration of Web 2.0 Technologies in Language Education: Focusing on Podcasting and Wikis

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Keywords

ブレンド型学習, 言語教育, Web 2.0, ポッドキャスト, ウィキ

Blended Learning, language education, Web 2.0, podcasting, wiki

ABSTRACT

Web テクノロジーは教育に革新をもたらした。Web 2.0が普及するにつれて、教員や学習者は、物理的な距離や時間の制約を超えることができるようになり、学習にアクセスする機会が増加した。つまり教育は、より開かれたものとなってきたのである。それでは、教師や学習者はどうしたらWeb 2.0のテクノロジーを最大に活用できるのだろうか。言語教育においてWeb 2.0を効果的に活用するための要因について文献調査と著者のポッドキャストとWikisを使った数多くのケーススタディからこの疑問を明らかにすることを試みた。要因は7つあり、課題要因、インストラクショナル・デザイン要因、教師/生徒要因（教員中心か生徒中心の学習か）、環境要因、テクノロジーの融合要因、協調要因、伝統的な授業と共通した要因があげられる。また、教師や研究者は既存のパラダイムや理論がWeb 2.0を使った教育に当てはまるのか検証の必要性を述べる。

Web technologies brought about innovation in teaching and learning. They enhance access to education and open up opportunities for learning. Now language learners can learn foreign language in more authentic environment than before, since they can get over physical distance and time with the emerging technologies. Especially integrating Web2.0 among various Web technologies, language education can possibly become more interactive. A wiki, for example, is a marvelous tool for collaborative writing. Learners can now interact with

each other online. Then how can instructors and learners make best use of Web 2.0 technologies in language education? To answer this question, factors that affect effective integration of Web2.0 technologies in language education are identified through literature review and the author's extensive experiences as an EFL instructor and a researcher of using podcasting and wikis in English as a Foreign Language, context. There are seven factors: task factor, instructional design factor, teacher/learner factor which refers, in this case, to teacher and learner centered approach, environmental factor, technological integration factor, collaboration factor, and a factor in common with that in a successful traditional class. These factors are influential in designing and carrying out instruction whether the instructor is aware of them or not. The paper suggests that instructors consider basic questions to see if existing paradigms and theories fit well to explain the phenomenon related to Web 2.0 technologies.

1. Introduction

What are the factors that affect effective integration of Web 2.0 technologies in language education? Though Web 2.0 technologies such as podcasting, wikis and blogs have become popular in instructors and learners daily lives, the effective use in English as a Foreign Language (EFL) context is still exploratory. Bonk (2009) powerfully claims that Web technologies have revolutionized education. He contends that "the World is Open" by describing "now anyone can learn anything from anyone at any time (p.7).

In line with "the World is Open," Anzai claims (2007a, 2008a, 2008b, 2009) a conventional classroom can be empowered with Web technologies. She asserts that Web 2.0 helps to overcome time and physical distance constraints for language learners (Anzai, 2007a), which is very critical for authentic language learning. Now a traditional class is extended and expanded to a planetary community, where learners can participate, interact and collaborate. Web2.0 is the driving force for this revolution.

Among many Web 2.0 technologies, this study focuses on podcasting and wikis. The term, Web 2.0 has received worldwide acceptance, though no definitive meaning for it has given (O'Relly, 2005, Warschauer, 2009). It is characterized by

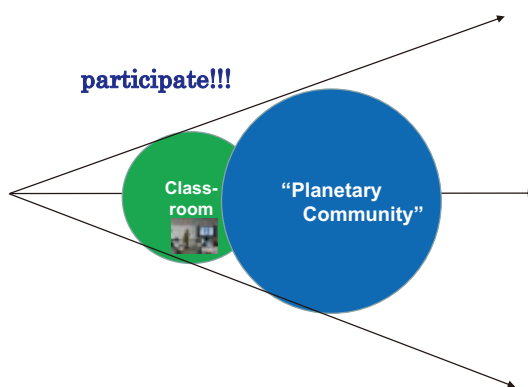


Fig. 1. Planetary Community in Blended Learning, (Anzai, 2009).

interactiveness, so a learner can interact with a teacher or other learners using the technologies. Podcasting is a means of publishing audio and video content on the Web as a series of episodes with a common theme (Deal, 2007). It is especially suited for mobile learning; A learner can learn anywhere, so learning environment becomes ubiquitous. Another Web 2.0, Wikis, is "a collection of Web pages that can be easily viewed and modified by anyone, providing a means for sharing learning and collaboration" (Hall, 2006, p.13). It is suited for collaborative learning, and started as openly accessible online journals. Each tool has its special features, but the underling basic concept is reciprocal communication.

2. Factors that affect effective integration of various Web 2.0 technologies in language education

This paper aims to identify factors for effective integration of Web2.0 technologies in language learning. Inan & Lowther (2009) grouped the use of technology into three broad categories: technology for instructional preparation, technology for instructional delivery, and technology as a learning tool. Though their study focused on teachers' individual characteristics and perceptions of environmental factors, this study covers wider range of factors than their study in the three properties they mentioned. The following seven factors are identified and discussed in this study. They are task factor, instructional design factor, teacher/learner factor, environmental factor, technological integration factor, collaboration factor, and a factor in common with that in a successful traditional class.

2.1 Task factor

Instruction of the task must be carefully designed to achieve the goal of the education. The task should

find best suited educational contents and the best suited Web 2.0 technology. A podcast, for example, has various dimensions. They are categorized into "created contents" and "readily available contents." These readily available podcasts, furthermore, are divided into "podcasts created for teaching languages" and "those which are not particularly created for language learning purpose but recorded in a target language." Furthermore, there is a wide selection of readily available podcasts. They are categorized into four subject areas (Anzai, 2007a). 1) Podcasts provided by mass media organizations, 2) podcasts provided by academic institutions, 3) podcasts related to hobbies, and 4) others (See Table 1). Among these categories, especially 1) podcasts provided by mass media organizations and 2) podcasts provided by academic institutions can be useful as EFL materials. These podcasts can be used in different purposes in language education: writing, speaking and listening practice. Thus a teacher should be careful to select how to use a specific Web2.0 technology for the particular task to maximize the outcome.

Table 1. Category of Podcasts

Source	Example
Mass media	CNN, BBC, VOA, National Geographic ABC, Newsweek
Academic institutions	UC Berkley, Stanford iTunes U The Open University
Hobbies	Hawaii Surf Session Report, MLB.Com
Others	The White House, SCIENCE@NASA

2.2 Instructional design factor

Instruction should be carefully designed, and ID models and theories guide this process. Suzuki (2005) claimed, "Get an arm before you fight!" encouraging use of ID models. Jung proposed two ID models, which are very helpful for designing

instruction, especially for designing instruction with Web2.0 technologies. One is Optimal Model (Jung, Kubota & Suzuki, 2008). The other is "A model for e-education" (Jung, 2009). They are excellent navigators for designing instructions.

Use of an ID model with a theory adds stableness

to language instruction. Harrison, R., Sanehira, M., Shimada, N., & Iwasaki, Y. (2007), for example, used Social Constructivist theory and Debski's ID model, which consists of idealization, realization, implementation and evaluation, for their study. They evaluated how Web2.0 technologies can be utilized and how the technology integration influences learning Japanese as a Foreign Language. Another example of thoughtful instructional design with theoretical background is demonstrated in a report of action research by Lian & Bonk (2009). They designed the instruction using the concept of "interaction", textual, social and technological interaction, and levels of difficulty, from simple to more complicated. They also adopted five practical steps: (1) setting course objectives, (2) formulating the techniques and strategies, (3) selecting the media and tools, (4) organizing the activities and technologies, and (5) evaluating student learning. Good instructional design navigates quality instruction.

2.3 Teacher/learner factor

Who takes the initiative in learning is an important factor for effective learning. In traditional instruction, a teacher defines what a learner will learn based on the curriculum. In other words, the teacher plays the central role in the instruction. However, during past few decades, a social-constructivistic approach has been gaining attention. With this change, language education experienced a paradigm shift and the instruction can become more learner centered. In this Constructivistic approach, a teacher becomes a facilitator, a mentor, or advisor, and scaffolding becomes important concept to support a learner. The following two sections describe details of these two approaches.

Teacher-centered. Lu (2009) used VOA Special English, readily available podcasts for teaching language. He hypothesized that "through dictation practice, the participant would become more

accustomed to real English usage, including becoming more familiar with coarticulation effects that frequently occur in spoken language." The subject was a 23-year-office worker. Lu planned instruction of transcribing a 200-word podcast, understanding it and creating an audio file by imitating the original file. The subject pointed out the biggest obstacle to his understanding the podcast was his small vocabulary. The same concern about the level of authentic English was expressed in Lu's second study. From these experiences, Lu concluded that advanced EFL learners may be able to access authentic language materials using podcasts and get over the disadvantages of not having an English environment. Since the teacher was taking the initiative, Lu's study is an example of a teacher-centered approach.

Learner centered. A wiki is a good tool for a learner centered approach, since the learners can collaboratively construct knowledge. Through the learning activities, learners can collaborate and construct knowledge. Wiki studies in language context are reported by Wolf (2008) and Anzai (2008a). Anzai used a wiki in her EFL writing class, and she reported that the students showed interest and satisfaction in using a wiki. While Anzai reported success, Wolf reported frustration of using wikis in his language class. Wolf participated in a wikibook project in his Japanese language class as a learner, and noted that the comments from his peers were not very useful in spite of the time he invested. He expressed his expectation that a teacher should involve himself/herself more than being a facilitator. His comment reveals the challenge which learner centered approach is facing in Japanese culture. A learner's readiness and willingness is a key for learner-centered approach.

2.4 Environmental factor

How the teacher designs the learning environment is an important factor in developing the potentials of

Web 2.0 language instruction. One of the prominent characteristics of Web 2.0 technologies lies in its interactiveness in open online space. The contents learners have created become available to the worldwide Internet users. In this regard, publicizing a local town is beneficial for the town. Many podcast projects are conducted with the support of the school administration and/or the local public organization, such as Chamber of Commerce. An example includes Nakata (2009) at Kinjo-Jogakuin in Nagoya, Japan. The students at Nakata's seminar created podcasts on local sightseeing spots and local businesses.

2.5 Technological integration factor

Can combining Web 2.0 technologies energize learning more than just a single use of technology? If this is the case, and if multiple use of Web 2.0 technologies are for free, it is definitively worth trying for both educators and learners. There are some exploratory studies in this regard, such as combining multiple use of Web 2.0 technologies, and Web 2.0 and other devices such as Skype, which is a free Internet telephone system, cellphone, and a blog.

Travis & Joseph (2009) reported an extensive case study involving the creation and posting of podcasts through blogs, Splendid Speaking. Their podcasts are based on the authentic speech recordings of English language learners from around the world. A total of 40 conversations using Skype were turned into 29 podcasts. They used the free Internet telephone system Skype creatively, and other low-cost and free software programs to edit and publish the podcasts. In spite of the cost efficiency, the time demanded for creating these podcasts was the major problem. They mentioned that the authors spent approximately five hours per episode. Overall, they noted that subscription to the Splendid Speaking podcast continues to grow and that feedback is very positive.

While Travis & Joseph (2009) used Skype, Viswanathan (2009) used mobile phones to create podcasts. Viswanathan (2009) conducted an action research project with EFL students in India. Viswanathan created a virtual classroom and promoting the students' participatory learning. Their activities started from listening through the use of ESL/ELF podcasts and Business English podcasts and ended uploading the students' created podcasts. As is seen in Viswanathan's study, integrating a mobile phone is a good option to expand the learners' activities. A lot of multi-media activities are possible with this small device. Learners can shoot short videos, taking pictures or exchange audio-files using their mobile phones.

2.6 Collaboration factor

Collaboration is valuable factor for effective integration of Web 2.0 technologies. Participating in a online space from difference places and working collaboratively becomes possible using emerging technologies. The collaboration occurs between different institutions or within a classroom. Below are some examples of case studies which include collaboration factor.

Collaboration with other institutions. Bonk (2008) conducted several cross-institutional studies using wikis. By collaborating with other institutions, he empowered the classroom. A wiki was used as a powerful online tool. He created a wikibook with M. Lee. Working collaboratively, Bonk's students participated from Indiana University, whereas Lee's students participated from the University of Houston. This is a good example of how learning environment was expanded. Both authors concluded that a wikibook is a great online tool for learner collaboration and interaction (Bonk & Zhang, 2008).

Collaboration within the class. Another type of collaboration occurs within a class (Anzai, 2008a; Gillian, 2008). Anzai (2008a) used a wiki in her EFL writing class as a revising and editing tool. Through

such a system, learners can experience participatory learning on a wiki. Anzai identified five factors for successful collaboration using a wiki. (1) the students' curiosity from novelty effects; (2) the students' digital literacy is necessary so that they can enjoy the online collaboration; (3) quality contents to write on a wiki. (4) student leadership; a few students took the leadership role to lead the group members; and (5) encouragement from a teacher.

There are some other reports of intra-class collaborative studies using a wiki. Gillian (2008) conducted a quantitative research using podcasts and initiated a collaborative podcasting project in an undergraduate Spanish class. Chao and Huang (2007) studied the effects of a blog and a wiki on EFL students' English writing. They noted that a wiki as an approach to a focus on form is particularly meant for the peer editing task that requires students to read the text meaning, attend to linguistic forms, and correct the ungrammatical forms. Engstorm and Jewett (2005) investigated collaborative learning in a geography class and showed the potential for collaborative and inquiry-based learning. Lund & Smordal (2006) conducted a wiki study based on sociocultural theories, and they concluded that working with wikis brings an epistemological change, from individual acquired to collectively created knowledge.

2.7 Factors in common with successful traditional class

The author, Anzai, conducted a series of studies on podcasting and a few studies on wiki in EFL context (Anzai, 2006, 2007a, 2007b, 2008a, and 2008b). Through these experience of using podcasting and wikis, much of the influential factors seem to be same as those in the traditional classes. The factors from the teacher's side include making a good study plan, sufficient preparation for the class, implementation with smooth technological operation, creating a comfortable class atmosphere.

From the students' side, the success factors would include the students' interest, preparation for the class, active participation and satisfaction. Some factors may be the common factors such as creating comfortable class atmosphere.

As is discussed, seven factors contribute to successful integration of Web 2.0 technologies in language education. They are task factor, instructional design factor, teacher/learner factor, environmental factor, collaboration factor and a factor in common with that in a successful traditional class. When designing language education using Web 2.0 technologies, paying special care to these factors will help to design effective language education. These factors may also serve as a focal point of research, since they are considered to be influential factors in language education in Web 2.0 integrated environment.

Implications for Future Study

Most of the literature reviewed consisted of case studies. Skillful, imaginative practitioners demonstrated how emerging technologies can be effectively incorporated in the classroom to promote learning. Given that language educators are at the early stage of this evolution and because technologies are changing very quickly, there is a need to conduct such case studies to see how technologies are best employed to maximize the output and how these studies can contribute to the formulation of new theories and paradigms. Now educators should ask such questions. What is the best paradigm to explain the phenomena related to these technologies? Can the established paradigms fit well for these new types of learning methods? How do the findings from the case studies relate to the theories of educational technology? These basic questions need to be asked and answered in future studies.

Conclusion

Must we consider the media as a kind of “grocery truck?” Clark (1983) reviewed meta-analyses and other studies on the media’s influence on learning, and concluded that “there are no learning benefits to be gained from employing any specific medium to deliver instruction.” He claimed that “the best current evidence is that media are mere vehicles that deliver instruction but do not influence student achievement any more than the truck that delivers our groceries causes changes in our nutrition” (p.1). The issues were debated, and scholars such as Kulik, Kulik, & Williams (1983) and Kozma (1991) disagreed with his view. According to Heinich et al., “Summaries of research with students at various levels- elementary, secondary, college, and adult education---show that computer-based instruction generally has positive effects on student achievement.” In addition, James Kulik and his colleagues (1986) concluded that on the average, computer-based instruction assisted students in enhancing their achievement test scores by 10 to 18 percentage points as compared to conventional instruction (p.217). The significant lesson instructors and researchers learn from their arguments is the importance of instruction. Instructors should not forget how instruction influences learning, although generally, they tend to be attracted to new technology. The arguments also caution them against the novelty effect on learning, which does not last long. Pursuing the possibility of education with technology, they should recognize that the core of educational technology is education. A language instructor should deliver high-quality content effectively and efficiently, technology should be explored to determine how it is possible. The seven factors in this paper should be considered to design successful language instruction integrating Web 2.0 technologies, especially podcasting and wikis.

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